

**ABSTRACT**

5 A process for the preparation of a synthesis gas containing hydrogen and carbon monoxide by a combination of catalytic partial oxidation and further an autothermal reforming process, comprising

(a) providing separate streams of predetermined proportions of a hydrocarbon feedstock, an oxygen source and of process steam,

(b) injecting said separate streams into a catalytic partial oxidation reaction zone to react, and to form a prereformed product stream,

(c) introducing the prereformed product and a predetermined proportion of a second oxygen source into a further partial oxidation process step forming a further partially oxidised process stream by flame reactions,

(d) reacting the further partially oxidised process stream in the reaction zone constituting a steam reforming process step to form a synthesis gas product stream, and

(e) withdrawing the synthesis gas product stream from the further partial oxidation process step and the steam reforming process step, the two steps constituting the autothermal reforming process.